Title (en)

METHODS FOR PREDICTING OUTCOME AND TREATMENT OF PATIENTS SUFFERING FROM PROSTATE CANCER OR BREAST CANCER

Title (de)

VERFAHREN ZUR VORHERSAGE DES ERGEBNISSES UND DER BEHANDLUNG VON PATIENTEN MIT PROSTATAKREBS ODER BRUSTKREBS

Title (fr)

PROCÉDÉS DE PRÉDICTION DE L'ÉVOLUTION ET DU TRAITEMENT DE PATIENTS SOUFFRANT D'UN CANCER DE LA PROSTATE OU D'UN CANCER DU SEIN

Publication

EP 3775908 A1 20210217 (EN)

Application

EP 19716455 A 20190415

Priority

- EP 18305460 A 20180413
- EP 2019059698 W 20190415

Abstract (en)

[origin: WO2019197683A1] The invention relates to methods for predicting the outcome of a patient suffering from prostate cancer or breast cancer and methods for the treatment of prostate cancer or breast cancer. The inventors show that Doublecortin-expressing (DCX+) neural precursors from the central nervous system (CNS) enter the bloodstream, infiltrate prostate tumours and metastasis and differentiate into neo-neurons that contribute to tumour development. In human primary prostate tumours and transgenic mouse cancer tissues, the density of DCX+ neural progenitors is strongly associated with tumour aggressiveness, invasion and recurrence. In transgenic cancer mice, oscillations of DCX+ neural stem cells in the subventricular zone (SVZ), a neurogenic area of the CNS, were associated with egress of DCX+ cells from the SVZ to the bloodstream. These cells then reach the tumour where they initiate neurogenesis. Selective genetic depletion of DCX+ cells in mice inhibits the early phases of prostate cancer development, whereas ortho topic transplantation of DCX+ cells purified from prostate tumour or brain tissues promotes tumour growth and cancer cell dissemination. These results unveil a unique crosstalk between the CNS and the tumour that drives a process of neurogenesis necessary for prostate cancer development, and indicate a novel neural element of the tumour microenvironment as a potential target for cancer treatment. Thus, the invention relates to a method for predicting the outcome of a patient suffering from prostate cancer and compound targeting DCX+ neural progenitor cells for use in the treatment of prostate cancer.

IPC 8 full level

A61K 45/06 (2006.01); **A61P 13/08** (2006.01); **A61P 35/00** (2006.01); **G01N 33/574** (2006.01)

CPC (source: EP US)

A61K 31/00 (2013.01 - EP); **G01N 33/57415** (2013.01 - US); **G01N 33/57434** (2013.01 - EP US); **G01N 33/57484** (2013.01 - US); G01N 2496/00 (2013.01 - US); G01N 2800/52 (2013.01 - EP US)

Citation (search report)

See references of WO 2019197683A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

WO 2019197683 A1 20191017; EP 3775908 A1 20210217; JP 2021521445 A 20210826; US 2021164984 A1 20210603

DOCDB simple family (application)

EP 2019059698 W 20190415; EP 19716455 A 20190415; JP 2020555906 A 20190415; US 201917047269 A 20190415